

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027664**Date Inspected:** 29-May-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** As noted below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** SAS OBG**Summary of Items Observed:**

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

13E Drop-In Panels (Exterior/Interior)

This QA Inspector randomly observed the repair welding operations performed by Three (3) ABF certified welders at the following locations. ABF welders Salvador Sandoval (ID 2202) at 13E-A.1 and 13E-A2.1, Jacob Stafford (ID 8020) at 13E-E2.8 on the exterior and Steven Davis (ID 7889) at 13E PP122.2 on the interior of the OBG placed the Pro-heat 35 thermal blankets over the welds to pre-heat to 110°C (225°F) prior to excavation with Carbon Arc Gouging (CAG). Upon removal of the discontinuities, QC Inspector Salvador Merino performed Magnetic Particle Testing (MT) to ensure soundness of the metal and it was observed that Mr. Merino found no relevant indications and recorded the dimensions of the excavations which are listed below. The welders were observed depositing metal by utilizing the Shielded Metal Arc Welding (SMAW) process in the 1G flat and 4G overhead positions respectively, employing 3.2mm E7018-H4R electrodes drawing amperage of 127 as pertaining to ABF-WPS-D1.5-1004-Repair. This QA Inspector verified that the electrodes were obtained from a baking oven at the correct temperature and within acceptable exposure limits. The welders were observed cleaning the start/stop edges of the work utilizing small disc grinders and compressed air and restored the base metal to the original surface and ground smooth, and the welds to their specific profiles. Post Weld Heat Treatment (PWHT) was applied to each completed weld surface at 230°C (450°F) for a period of 1 hour in accordance with Section 12.15 of AWS D1.5-2002. The repairs were completed on this date and appeared to be in general conformance to the

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contract specifications.

Dimensions of the Excavations.

Salvador Sandoval (ID 2202)

13E-A.1 (exterior)-y+5230mm; 90mm in length, 30mm wide and 11mm deep, y+5430mm; 90mm in length, 30mm wide and 11mm deep.

13E-A2.1 (Exterior)-y+110mm; 95mm in length, 30mm wide and 13mm deep, y+430mm; 100mm in length, 35mm wide and 13mm deep, y+940mm; 100mm in length, 35mm wide and 11mm deep, y+1215mm; 110mm in length, 40mm wide and 12mm deep.

Jacob Stafford (ID 8020)

13E-E2.8 (Exterior)-y+10825mm; 80mm in length, 20mm wide and 13mm deep, y+10590mm; 80mm in length, 20mm wide and 13mm deep.

Steven Davis (ID 7889)

13E PP122.2 (Interior)-y+8350mm; 70mm in length, 30mm wide and 18mm deep.

13E/14E-LS1 (Interior)

This QA Inspector made random observations of ABF welder Edward Brown (ID 9331) performing SMAW in the 3G vertical position on the Longitudinal Stiffener (LS) at 13E/14E on the interior of the OBG. The welder was observed pre-heating the joint by use of the Pro-Heat 35 thermal blankets where they remained throughout the welding process to provide continuous heat. QC Inspector Salvador Merino monitored the welding and the parameters as they pertained to ABF-WPS-D1.5-1012-3 and measured the inter-pass temperatures between passes as the welder cleaned the work utilizing a small disc grinder. On a subsequent observation, the welder was observed back-gouging the root side of the weld to clean shiny metal so as to allow QC to perform MT on the site. Upon completion of testing, the QC Inspector observed no rejectable indications and welding commenced on the root side of the joint. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work at this location was completed on this date and appeared to be in general conformance with the contract specifications.

6E PP46.5 E5-DAH (Exterior)

This QA Inspector performed Magnetic Particle (MT) testing on the Deck Access Hole (DAH) located at 6E PP46.5 E5 on the exterior of the OBG. This QA Inspector performed MT testing utilizing the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6.26. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications. This QA Inspector performed an Ultrasonic Inspection (UT) inspection on approximately 10% of the welds on the DAH. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

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8W PP61.5 W2-LSW (Interior)

This QA Inspector performed MT testing on the West LS located at 8W PP61.5 W2 on the interior of the OBG. This QA Inspector performed MT testing utilizing the yoke method in conformance with ASTM E 709 and the standard of acceptance with D1.5 section 6.26. This QA Inspector noted that no rejectable indications were found at the time of testing. This QA Inspector generated a TL-6028 MT report on this date. The completed work at this location appeared to be in general conformance with the contract specifications. This QA Inspector performed an UT inspection on approximately 10% of the welds on the LSW. These welds were previously accepted by QC Ultrasonic technicians in accordance with AWS D1.5-2002, section 6, table 6.3. This QA observed no rejectable indications at the time of testing. This QA generated a TL-6027 UT report on this date. The completed work observed at this location appeared to be in compliance with the contract specifications.

13E PP120.6-LS2 (Interior)

This QA Inspector made random observations of ABF welder Khit Lounechaney (ID 4985) performing the SMAW process in the 3G vertical position utilizing E9018-H4R electrodes on the Longitudinal Stiffener at 13E PP120.6 on the interior of the OBG. The welder was observed grinding the start/stop edges of the work between passes employing a small disc grinder and maintained sanitary workmanship. QC Inspector Sal Merino was present to monitor the welding and the parameters as they apply to ABF-WPS-D1.5-1012-3 Revision 0. The welder was noted as continuing the production welding and between passes the QC Inspector verified the welding parameters and surface temperatures utilizing a Fluke 337 clamp meter to measure the electrical welding parameters and Tempilstik Heat Indicators for verifying the preheat and inter-pass temperatures. The welder was observed utilizing 3.2mm E9018-H4R electrodes drawing amperage of 125. This QA Inspector noted that the electrodes were stored in an electrically heated, thermostatically controlled oven after removal from the sealed containers. The exposure limits of the electrodes appeared to comply with the minimum storage oven temperature of 120 degrees Celsius as per the contract documents. It was observed that the use of Pro-Heat 35 thermal blankets on the opposite side of the joint to provide a constant 200° F temperature throughout the process. On subsequent observations, it was noted that the work was ongoing and appeared to be in general conformance with the contract specifications.

13E PP123.6-QC NDT (Exterior)

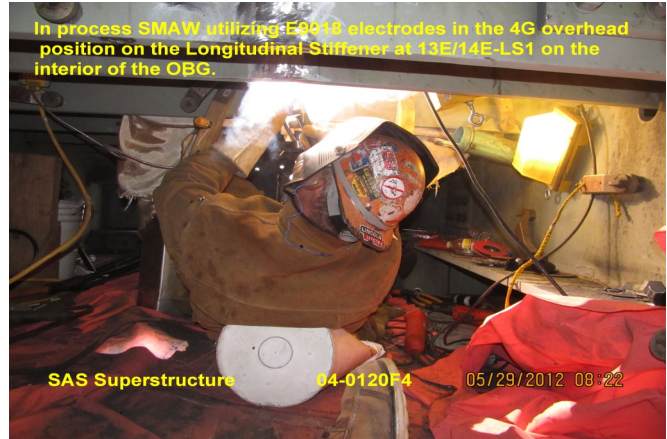
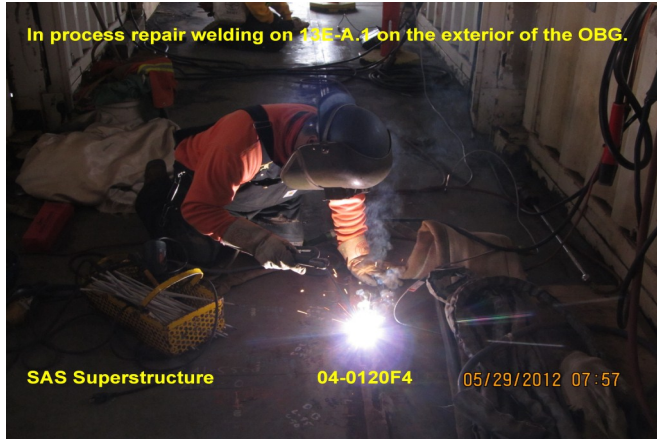
This QA Inspector randomly observed QC Inspector Steve McConnell performing UT testing on the completed weld along 13E PP123.6 on the exterior of the OBG. QC was observed scanning from each side of the weld and the scanning pattern as described in D1.5 6.24. The QC Inspector was noted as recording rejectable indications and recordable indications. This QA Inspector noted that the work at this location is in progress and appeared to be in general conformance with the contract documents and SE-UT-D1.5-CT-100.

Summary of Conversations:

This QA Inspector discussed work and locations to be performed for this date with QC Inspector Salvador Merino.

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Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

Inspected By: Frey,Doug

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer